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ABSTRACT

A general model of the uses of symbolic systems is defined in terms of the use of two techniques of symbolization: transactional and presentational. These techniques in turn are shown to relate to underlying modes of experience, which Susanne Langer has discussed as objective and subjective feeling, respectively. The second half of the paper provides a summary of the developmental course of presentational (or artistic) techniques. Developmental changes in skill in literature, music, and the pictorial arts are discussed in terms of the complexity of the experience which can be mastered, the specific techniques and conventions of symbolic systems, and the relationships between the experience in a work and the life-experience of the individual. Parallels are noted between the development of skill in the arts and other areas of psychological development, including the changes that result from the acquisition of formal operational modes of thinking. (Author)

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Skill in the Arts:

The Functions and Development of Presentational Symbolism

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Skill in the Arts: The Functions and Development of Presentational Symbolism

Abstract

A general model of the uses of symbolic systems is defined in terms of the use of two distinct techniques of symbolization, 'transactional' and 'presentational'. These techniques in turn are shown to relate to underlying modes of experience, which Langer (1967; 1972) has dealt with as objective and subjective feeling, respectively.

Our knowledge of presentational symbolism in various media is more limited than our knowledge of transactional techniques. Thus the second half of the paper provides a summary and reconceptualization of the developmental course of presentational (or artistic) techniques. Developmental changes in skill in literature, music, and the pictorial arts are discussed in terms of 1) the complexity of the experience which can be mastered; 2) the specific techniques and conventions of symbolic systems; and 3) the relationships between the experience embodied in a work and the life-experience of the individual. Parallels are noted between the development of skill in the arts and other areas of psychological development, including the changes that result from the acquisition of formal operational modes of thinking.

Skill in the Arts: The Functions and Development of Presentational Symbolism

Introduction

The nature and function of the arts is an ancient philosophical, and more recently a psychological, question: though the commentators who have considered it are many and distinguished, there has been little consensus in specifying either the nature of artistic experience, or the particular role that it plays in the life of the individual (cf. Gardner, 1973). The most promising approaches to the arts have been those which recognise artistic expression as part of man's general tendency to construct symbolic representations of his experience, a tendency which manifests itself on levels as diverse as science and mathematics, architecture and poetry, myth and ritual. Yet these approaches have suffered from a tendency to treat the arts one at a time, in isolation from one another as well as from other types of symbolization. Recent reconceptualizations in the fields of psychology, philosophy, and linguistics, however, make it possible to propose a general model of symbolic systems, in the process suggesting a new and more powerful way of understanding artistic expression.

This model, which will be developed in detail below, is presented schematically in figure 1. Roughly speaking, the poles of the model separate

Figure 1 about here

the arts from the sciences, but we will be arguing that this division involves two distinct and specifiable ways of making sense of or construing experience, for each of which we have evolved distinct techniques of symbolization.

In the arguments which follow, the work of several individuals will figure particularly prominently. George Kelly's (1955) theory of personal constructs provides a general perspective, and a specific vocabulary for discussing the way in which we make sense of our experience. Susanne Langer's

(1953; 1967; 1972) philosophical analyses provide the analytic framework for understanding the two quite different symbolic techniques, as well as for understanding the different properties of mind with which we will connect them. The works of Jean Piaget and Jerome Bruner add the developmental dimension to our studies, tracing in detail the evolution of various systems of representation; as an introduction to their prolific writings, we can reference Flavell (1963) and Bruner (1974). Finally, James Britton's (1970; 1971) detailed and perceptive analyses of the uses of language provide the basis for the more general model discussed here; the influence of his work pervades all that follows.

The Realms of Experience

Susanne Langer (1967; 1972), in her synoptic theory of mind, approaches the difficult problem of distinguishing cognition, perception, sensation, and emotion one from another by proposing a fundamental unity in all such experiences: each is an occasion when processes of mind reach a threshold of intensity and are as a consequence felt. As she puts it, "Feeling, in the broad sense of whatever is felt in any way, as sensory stimulus or inward tension, pain, emotion, or intent, is the mark of mentality" (1967, p. 4). She divides human feeling into two major modes, differing primarily in their origin: the objective, which is felt as impact and seems to have an existence outside of the individual; and the subjective, which is felt as the consequence of internal actions and processes.

We tend to treat our experiences of these two modes as belonging to two distinct realms: they are the worlds of the self and the not-self, of personal and public, of subjective and objective, and of the emotional and the rational. If we follow Kelly (1955) in asserting that man builds a representation of the world out of the implications of his past experience, it will not be surprising that we find quite different modes of representation and construing evolving in response to our experience in these two domains. We will begin by

considering the techniques we have evolved for symbolizing objective experience, and then turn to techiniques in the subjective realm.

The Symbolization of Objective Experience

The essential characteristic of objective experience is that it seems to have an existence independent of us as individuals. In symbolic systems, such independence or externality is achieved most fully by stating the rules. In an abstract logical or mathematical systems, for example, relationships between symbols and referents are defined, axioms are stated, and permissable operations and transformations are specified. Any argument which we make (or in different terms, any representation which we construct) will be judged against the system of rules; its 'truth' will be 'objectively tested'.

Polanyi (1958) has demonstrated that such objectivity is more elusive than it seems; there remains and must remain a personal or tacit component in even the most highly formalized system (recall Langer's felt as impact). Nonetheless, this component can be reduced to the point that the system seems to convey a totally objective 'meaning' on which we as individuals have little influence. Following Britton (1970), we will call symbolic systems which attempt to reduce the personal component in this way transactional, since such an agreement about meaning is a condition for transactions between individuals, for the development of theory as well as for the day-to-day business of life.

Fully formalized systems of transactional symbolism are very rare; they represent a very high level of abstraction, and are late developments in both a generic and a genetic sense. There are many intermediary modes of transactional symbolization, however, which obtain their objectivity from an implicit formalization provided by the 'context' (in Lyon's (1969) sense) in which the system is used. Kuhn (1962) has given detailed attention to the contexts which operate within the various fields of science, treating them as

underlying paradigms governing inquiry. Such paradigms (which change over time and are rarely fully formulated) specify rules of evidence, procedures of investigation, relevant questions, and to some extent even the results which will be treated as valid 'evidence' rather than inexplicable 'anomalies'. Though lacking the axiomatic rigor of formal logic, such contexts also serve to externalize discussion, increasing the sense of objectivity by standardizing as fully as possible the frame-of-reference which will be used in interpretation.

Such standardization is one aspect of what we mean by "socialization." The individual, in interpreting the actions of others as well as noting their interpretations of his own actions, gradually builds up a system of representation which will also be consistent and governed by similar (not necessarily identical) rules. The acquisition of syntax is a good example: after centuries of study, scholars still disagree on the nature and structure of language--though if they share the same dialect they will agree very quickly about ungrammatical forms. Such systems of implicit rules structure all aspects of our experience, from the primary socialization of childhood to the specialized contexts of scientific and professional endeavor. In turn, these rules give us our first socially derived experiences of objectivity, of a world that seems external and absolute though in fact most of its forms are socially derived and arbitrary.

The Symbolization of Subjective Experience

Transactional techiniques are relatively well understood, if only because in their purest, polar forms they involve the public statement of rules-of-use. Because these rules are public and specified, however, they need bear little relation to the processes of mind; the subjective on the other hand is by definition a product of the working of the mind as a whole, and therefore must reflect the complex processes of that mind.

Langer (1953) has gone further than most in analyzing the presentational techniques through which such complex experience can be communicated. Discussing symbolic systems as diverse as architecture and poetry, she finds in each a formal analogue of the life of feeling. As she puts it in describing music:

> The tonal structures we call 'music' bear a close logical similarity to the forms of human feeling--forms of growth and attenuation, flowing and stowing, conflict and resolution, speed, arrest, terrific excitement, calm, or subtle activation and dreamy lapses--not joy and sorrow, perhaps, but the poignancy of either and both--the greatness and brevity and eternal passing of everything vitally felt. Such is the pattern, or logical form, of sentience; and the pattern of music is that same form worked out in pure, measured sound and silence. Music is a tonal analogue of emotive life. (p. 27)

Or as she writes in a later work, ". . . it is fairly patent that the establishment and organization of tensions is the basic technique in projecting the image of feeling, the artist's idea, in any medium" (1967, p. 164).

The perception of such tensions and interrelationships lies at the heart of the techniques of presentational symbolization. Kenneth Burke's (1966) discussions of literature are helpful in understanding the processes involved. He argues that any work of literature has implicit in it a system of 'personal equations' or attitudes towards life which give it structure and form. These personal equations originate with the author: they are the constructs which govern his own actions, and thus in turn structure the relationships (or tensions) among the experiences which he depicts in his writing. The reader or critic 'reads back' these equations from the structure of the work itself.

The process of 'reading back' the personal equations involves building a representation of the construct system which shaped it. There are no formalized, 'objective' constructs to apply in interpretation, and no taken-for-granted context to specify the proper reactions. (Even if there is a conventional way of construing an experience, this manner of construing will have to be validated in terms of the particular work.) Yet although this response is internal and personal, it remains controlled because of the need to 'make sense' of the work: the representation we build must be adequate to explain both the detail and the

broad pattern of the work. The more tightly structured the relationships among such elements as colors, sounds, and incidents, the more precisely formulated (and interpersonally similar) our personal, subjective experience must be.

Because of this central role of structure in presentational symbolism, the rules-of-use in different presentational systems are concerned in large measure with specifying the relationships which count as significant. Unlike the essentially analytic, linear structure of transactional symbolism, however, these relationships can occur at many different levels simultaneously. The phonemic, semantic, syntactic, and thematic structures of a poem, for example, will be inextricably interwoven to produce an 'import' which can never be transactionally paraphrased.

Spectator and Participant

Presentational and transactional symbolism are the techniques which we use to communicate our subjective and objective feelings, in Langer's sense of those terms. Most works can be classified as predominantly one or the other, but few if any rely on only one set of techniques. Works which are primarily presentational will make use of transactional techniques to draw a moral, establish a context, or avoid complexity in aspects of experience with which the artist is not particularly concerned. Works which are primarily transactional, on the other hand, will use presentational techniques for rhetorical or persuasive effect: to illustrate a point or to demonstrate its relevance to subjective, personal experience. Yet even as we acknowledge that most representations make use of both techniques of symbolization, it is also clear that the conventions of presentational symbolism lead to a dichotomy in the way we approach the works which result. This is because presentational techniques ask us to consider a work as a whole; it is in this way that the fullest and most effective systems of relationships among its parts can be established. When this occurs, our attitude towards the experience becomes that of a spectator: we look on, judging and evaluating, but

we do not rush in to interrupt--to do so would spoil our sense of the whole.

The techniques of transactional symbolism, on the other hand, lead us to participate directly in the experience being offered: we judge the representation step by step, and act upon it piecemeal--whether that action is taking place in the realm of everyday life (close the door, please) or in the more intellectual realms of theoretical argument or professional discussion.

Even a work which mixes transactional and presentational techniques has to be experienced either as a whole, or step-by-step. We cannot, in one experience of it, construe it both ways. The choice of spectator or participant roles is not, however, simply arbitrary; like other aspects of symbolization, it is governed by conventions or rules-of-use which indicate the appropriate manner of construing. Britton (1970; 1971) has explored the implications of this choice in detail, arguing cogently that the choice is a fundamental one that shapes our whole experience of a work. It determines our conventions for construing, our criteria for evaluation, and the effect the work will have upon our own representations of experience.

The Expressive Mode

To complete the model in figure 1, we need to note that at its center is an essentially undifferentiated area of experience which Britton (1970) has called the expressive mode. The essence of the expressive is its reliance on mutual understanding and shared experience, rather than on highly formalized techniques of symbolization. Much as happens in casual conversation among friends, spectator and participant roles can be taken up in turn as points are made and stories told, producing a conversation which is fluid and informal. Expressive language will usually lack conscious direction, maintaining and confirming a shared representation of experience in the process of talking things over. Both developmentally and generically, other modes of symbolization are best viewed as differentiations of this central expressive mode.

The Development of Skill in Presentational Symbolism

Though there are no value judgments implicit in the model presented in figure 1, there is an imbalance in our understanding of the processes involved in different sectors. In particular, while the work of Piaget, Bruner, and many others has greatly increased our understanding of the development of skill in logical or transactional symbol systems, the processes involved in the development of artistic or presentational symbolism remain much less clearly understood. To begin to right this imbalance, the remainder of this paper will summarize some of what we do know about the development of presentational technique.

The constructive nature of mind has been implicit throughout the previous discussion: we build a representation of the world out of the implications of our previous experience, and the resulting system of expectations structures our future experience. Whichever aspect of mind we are considering, we find that such systems of expectations are operating. Thus in studying the ability to work in one or another symbolic medium, particular responses are interesting primarily for the light they shed on such systems and their development. We are less interested in 'how responsive' or 'how capable' a person is as measured by a test of musical appreciation, say, than in his expectations about music and the structures which he uses in interpreting and responding to it.

Though relatively few investigations of presentational symbol systems have been undertaken from this perspective, there is enough work in this tradition to indicate some general patterns of development. To organize and focus the discussion, we will draw heavily for both details and general principles on a series of studies of literary response (Applebee, 1973). In one part of this series, stories told by children between the ages of two and five were analyzed in terms of children's expectations about 'what a story is', as well as for form and structure. In a second part, the responses of children at ages six, nine, thirteen, and seventeen were analyzed on a wide range of tasks. In these studies,

developmental changes were found to fall in three major areas: 1) the complexity of the experience, both personal and presentational, over which the individual has mastery; 2) the mastery of specific techniques and conventions of the symbolic system; and 3) the perceived relationships between the experience embodied in the work and the life experience of the individual responding to it. Although there is some overlap among these categories, they serve to highlight the important areas of developmental change, and adequately subsume the findings of most previous research.

Complexity

An increase in the complexity of the experience which can be dealt with is the simplest sort of change to demonstrate. It is easy to show, for example, that both the stories children tell and those which they enjoy show a gradual increase in such characteristics as length, number of characters, number of incidents, and the extent to which the events dealt with are near to or very distant from the child's everyday world. The question of 'distance' is perhaps the most interesting aspect of complexity, for it involves not only the characters and settings of stories, but also the extent to which they explore taboo actions and socially unacceptable areas of behavior. One aspect of any system seems to be a tendency to work out its implications in full, eventually testing its limits and boundaries (Burke, 1966); so here as children become confident in their understanding of their immediate social world, they begin in stories to explore aspects which would otherwise be forbidden. "Just suppose. . . " seems a powerful and important technique for exploring the foolish and the villainous, while protecting the storyteller from becoming foolish or villainous himself.

If we turn from narrative to the visual arts, we find a similar increase in the complexity tolerated within the medium. Thus between the ages of five and twelve, for example, children gradually increase the number of different colors

they will introduce into a picture, the amount of background filled in, and the number of separate details that will be elaborated in a single figure (cf. Richards, Martin, & Ross, 1967). (The latter is such a consistent developmental characteristic that the detail in human figure drawing has been used as an important index of nonverbal IQ, as in the Goodenough Draw-a-man test (Harris, 1963).)

To take one final example, Gesell and Ilg (1943) found that between the ages of two and four, a child's singing develops from simple phrases to whole songs, with intermediary stages of singing parts of songs and singing whole songs off pitch.

None of these findings are particularly surprising, though the proportion of previous research which can be accounted for simply in terms of mastery of complexity is perhaps more so

Conventional Form

Mastery of the specific techniques and conventions of various presentational symbol systems is the central and difficult research question, in part because there is still considerable disagreement about what the specific techniques of presentational symbolism are, even in their mature forms. For the important questions of the 'logical' or structuring principles, for example, we have progressed little beyond Langer's (1953) claim that such structures "bear a close logical similarity to the forms of human feeling." And that, though useful as an analogy, is not much use as an analytic tool in examining children's developing abilities.

Certain sorts of mastery are very easy to demonstrate. In telling stories, for example, children as young as two-and-a-half begin to adopt such simple aspects of conventional form as the use of a title or "Once upon a time," of a consistent past tense, and of "the end" or ". . . . happily ever after." The use of such markers rises steadily from two to five, appearing almost universally

in the older age-group. Anecdotal reports suggest these are accompanied by the adoption of other narrative conventions, such as a special pitch or tone of voice for storytelling, and an expectation of being allowed to tell through to the end without interruption (e.g., White, 1954, p. 40; Cazden, 1972, p. 184). Such changes are easily noticed indices of assimilation of the culturally provided narrative system. At a more complex level, we also find evidence that children develop expectations about the types of actions and events that will appear in stories. In one series of questions, six- and nine-year-olds were asked how certain common character-types were likely to behave in a story; the children showed quite firm knowledge that witches are wicked, faires are good, and lions brave. Such stock types are simple examples of the complex patterns of expectations which we build up around symbolic media. These expectations are purely conventional and culture-specific, though we would expect the process itself to be general. (For studies of cultural schemata in stories, see Kuethe, 1966; Beshai, 1972; Blom, Waite, & Zimet, 1970; and Helson, 1973.) In spite of Richards' (1929) protests about stock responses, such conventional symbols are a useful device within the medium. A storyteller need not have his witches wicked or lions brave, but when he wants wickedness or bravery, he has ready at hand a set of conventional symbols which he can exploit to a larger purpose. (He can also of course depict a cowardly lion, relying upon the conventional schema to give special poignancy to the characterization.)

The simplicity of children's work can also be useful in studying the organization of presentational symbolism. The plots of children's stories, for example, consist of a series of elements or incidents, each of which has a series of attributes (characters, actions, settings, themes). Structure in the plot consists of links between elements, based on attributes which are either shared or else complementary in the sense that one implies or leads to the other, either through causation or because it is part of a larger situation in which both are expected to occur. In stories told by children between two and five, six basic

types of structures were found, bearing a remarkable resemblance to Vygotsky's (1962) stages in concept development and showing the same general developmental order. The correspondence seems more than accidental: concepts and presentational symbols both require the individual to provide a 'structured whole' relating diverse elements. Figure 2 provides a schematic summary of the six major plot-structures, as well as a brief summary of their occurrence at different ages. The diagrams suggest two more general organizational principles: 1) chaining, in which elements are linked one to another in a long chain, and 2) centering, in which one element (e.g., a theme or situation) is given a central position and all others are related directly to it.

Figure 2 about here

One feature of the fully-structured naratives is that they have become 'wholes' which can themselves be treated as 'elements' in more complex works. A few examples of such processes occurred in the collection analyzed (Applebee, 1973), where simple narrative episodes were linked together through chaining or centering as part of a more complex story. In fact by recognizing that centering and chaining can be applied recursively to ever-larger units, and also that elements and attributes can be specified at such differing levels as single sounds, rhythms, characters, themes, or symbols, we can see a possibility of generalizing these simple structures to more sophisticated literary forms, and perhaps even to other presentational media.

We know less about the development of skill in the conventions of other presentational modes, though it may also involve a gradual mastery of conventional forms and techniques, of 'the tradition' which forms the context for any new work. Gombrich (1960), for example, has provided a detailed and interesting analysis of the way in which both artist and viewer approach pictorial representation through a process of schema and correction. He sees the process as beginning not with a visual impression, but with a conventional concept or schema which provides a first approximation. And as he puts it, "if they have no provisions for certain kinds of

information we consider essential, it is just too bad for the information" (p. 63). Major historical shifts in style can be traced to changes in the conventional schemata which guide representation. It is quite likely that the child's evolving skills will involve similar shifts in its own schemata.

Relationship to Life

The relationship between a person's responses to presentational symbols and the rest of his life-experience also shows a characteristic pattern of development. For the young child, there is very little separation between these two realms. Even at six, many children will defend the reality of favorite story characters, believing that they could visit Cinderella, for example, if the journey were not quite so long nor the way so difficult. This belief is so firm that when it is finally shaken, there is often a period during which a story is automatically rejected if it is thought to be 'made up'. By nine most children have little doubt that there is a direct correlation between the world of the story and 'the way life is'. If a story stretches those expectations too far, it will be rejected quite firmly as not being possible. It is only much later, with the beginning of adolescence and, presumably, of Piaget's formal operational modes of thought, that the story is treated as what Harding (1962) has called "an accepted technique for discussing the chances of life," with an implicit awareness of the author's point of view and the possibility of alternate ways of construing the situation depicted. (It is interesting that this sometimes leads the child temporarily to reject books whose point of view differs from his own, just as at an earlier age there is a rejection of books thought to be 'made up'.)

In a similar way, children's preferences in painting show an increase in concern for realistic representation at seven or eight, and a concern for style and manner of representation during adolescence (Machotka, 1966). The processes governing the child's response would seem to be quite general ones, as indeed we would expect if subjective feeling arises from the working of the mind as a

whole.

Objective as well as subjective response is of course involved in any reaction to a presentational symbol: we note color, size, tradition, genre, as well as the liking, boredom, anger, or understanding that the work produces. These two types of response show parallel but quite distinct developmental courses.

Figure 3 presents a generalized summary of the course of development of

Figure 3 about here

such responses, based on children's performance when asked to 'tell about' a story known well, to give reasons for liking or rejecting stories, and to explain a number of common sayings (e.g., "When the cat is way, the mice will play"). The first column indicates the general stage of development, using Piaget's categories of preoperational, concrete operational, and early and later formal operational. The second and third columns indicate the way in which the child typically formulates his objective and subjective response, respectively.

Young children's preferred mode of discussing a story is simply to retell it, often at great length and with considerable enthusiasm. Beyond this essentially enactive response, however, they show very little differentiation. When asked to explain why they like a particular story, they will either seize syncretistically on some particularly striking detail, or explain carefully that they like it 'because it is good'. Details chosen show little sense of the total structure of a story; typically, a number of children said they disliked The Three Little Pigs because at the end the poor wolf ends up in the pot. Interestingly enough, when asked to copy drawings, children at this age will similarly approach it detail-by-detail, without any sense of the overall structure (Gardner, 1973; p. 220).

By nine, when the resources of concrete operational thought are more likely to be available, responses show spontaneous categorization and summarization. Rather than retelling a story, children give a synopsis or plot summary, using such categories as 'adventure story', 'exciting events', 'full of danger' that

at a younger age are rarely heard. The subjective response also begins to be commented upon, though without any awareness of the difference between a characteristic of the work and its effect on the reader. A story will be 'happy' or 'sad', 'exciting' or 'dull', just as it is 'a cowboy story' or 'about trains'.

Children's explanations of common sayings provide an excellent example of the very literal way they approach stories. The following exchange with Colin at 5;11 is typical of most children below the age of about 11:

> What does it mean to say, "When the cat is away, the mice will play"?--The cat is shopping, and the cat likes the mouse.--Could it mean something about children--The children have a mouse and a cat.

More complex stories are similarly treated as very concrete correlatives of the world at large. Some 56 percent of nine-year-olds, for example, claim to prefer true stories to ones which are imaginative--a percentage that drops to zero by seventeen, where most children express no preference.

Adolescence in fact brings many changes in response. During the early stages, works begin to be spontaneously analyzed: characters have motives and show development, incidents are seen to stand in strategic relation to one another, and methods of portrayal are treated as choices from among alternatives available to the author. Abstract meanings also become accessible, though the usual mode of explaining common sayings is by exemplification rather than generalization. "It means like when your parents go out you get out the whiskey, and get out the biscuits and eat them," is the way Harold explained it at 13;3. The child's analysis of his objective response brings with it a recognition of a separable subjective response as well. This is usually expressed as 'involvement' or 'identification' with the characters or situation. Paradoxically, it is when involvement is first expressed that it is also reduced by the introduction of an intermediary level of interpretation between the reader and the response. This seems to moderate and control the reaction, a phenomenon which Freidson (1953) has called 'adult discount', and which is evident even in physiological measures

such as the galvanic skin response (Dysinger and Ruckmick, 1933).

In later adolescence, the analysis of the objective response leads towards generalizations about theme and point of view. The author's choices of technique are seen to be in the service of a larger perspective, and this perspective begins to be directly commented upon. At the same time, the subjective response begins to focus on the effect of the work on the reader's own perspective or representation of the world (understanding gained or not gained, escape provided or withheld). The new concern with generalized meanings is also reflected in explanations of common sayings, which move away from exemplification towards a more abstract formulation of meaning. As Winifred (17:5) explains it, "When there is no governing force, e.g. fear, over life, one is free to do as one chooses."

There is some evidence that parallel stages occur in responses to works in other presentational symbol systems. Children's discussions of pictorial arts have been carefully studied by a number of investigators. Machotka (1966), studying French boys between the ages of six and eighteen, found three stages in their discussions of color reproductions. At the first stage, typified by his six-year-olds, criteria based on the content (subject matter) and color in paintings dominated. The second stage, occurring between seven and twelve, showed concern with the realism and clarity of the representation. Only at the third stage did a concern for the style and composition of the paintings emerge, as well as explicit formulation of subjective responses. His third stage parallels the emergence of a concern with analysis of literary works, and seems to depend upon the same mental operations. As he puts it, "The criteria of style and composition appear to imply the hypothetical existence of several manners of representation, one of which . . . seems the most satisfactory. The observer cannot judge style or composition if he knows only <u>one</u>; he can judge it only in comparison with others which, at the time of the judgment, are imagined or hypothetical."

Machotka's results are generally consistent with those of later investigators, though Gardner (1972; 1973) asserts that another effect of the analytic ability of adolescence is a decrease in sensitivity to some aspects of style. Summarizing his own work as well as that of other investigators, Gardner points out that both the quality of children's own art products, and their ability to match samples of a particular artist's work decline at about twelve. This fall in ability has been decried by some investigators, Gardner among them, but it seems more profitable to view it in the same light as other 'developmental errors': the child is moving from a system in which he is confident and capable, to a more powerful system which he has not yet fully mastered. In art, this leads him to adopt conceptual schemata which lead him astray on the particular experimental tasks which have been used. As Gardner (1972) summarizes, "The preadolescents were approaching the works without an appropriate vocabulary and making stylistic judgments on whether two works 'felt' the same, 'seemed' the same, or affected them in the same way. Older subjects, on the other hand, tended to apply labels drawn from aesthetic analysis or art history . . . and to make judgments based on whether the same labels applied to two works." In the same article, Gardner summarizes another series of studies in which college undergraduates proved sensitive to both the subject matter and the underlying geometric configuration when these were opposed to one another, whereas elementary school children were sensitive only to subject matter. This ability to respond to purely formal aspects of art is one of the gains which balance the decrease in 'style sensitivity' on other sorts of tasks.

Research on musical ability has been more throughly psychometric and offers very little of use in the present context. Gardner (1973) provides a good summary of those parts of the tradition which are relevant. Generally, by the age of five the child can recognize and sing a fairly large number of simple songs and motifs. Even untitled music seems to be treated referentially, as though it referred to particular events and particular people. Not until the eight to twelve age-range, however, do children learn to recognize underlying structural similarities when there are changes in tone, for example, or speed, and to begin to note time

values, repetition of patterns, and underlying beat. As in their responses to paintings, adolescents differ from preadolescents in attempting to bring knowledge derived from conceptual frameworks to bear on style-matching tasks; and as with painting, there is a decrement in performance on this type of task.

The Role of Formal Operations

Gardner (1973) argues that artistic development has two major stages: a presymbolic stage which lasts from about two to seven, and a symbolic stage which begins with the advent of concrete operational thought at about eight. Noting the ability of children in the eight to twelve age-range to produce highly attractive works of art in which such formal properties as balance and composition are present in at least rudimentary form, as well as the stability or even fall in performance on some measures of artistic response after age twelve, he argues that there is no qualitative reorganization in the mental processes of the child-artist comparable to the shift from concrete to formal operational processes in scientific thought. While admitting maturational changes as the child grows in experience, knowledge of cultural traditions, and mechanical skills, Gardner sees these as quantitative rather than qualitative developments.

To the extent that we limit aesthetic response to certain formal properties, such as the use of balance and composition, appreciation of harmony, and ability to maintain a narrative sequence, Gardner's arguments may be true. To the extent that we are concerned with the full objective and subjective response of the individual to a work of presentational symbolism, his division neglects the crucial changes in response that do seem to depend upon the resources of formal operations. Some of these changes we have seen above, in the shifting criteria of liking and the new ability to analyze a work that comes with adolescence; Gardner is aware of that evidence but sets it aside as part of the child's developing ability as a critic, rather than as creator or audience. We can offer some lines of argument which

suggest that such setting aside is wrong.

Though it is very difficult to untangle ability to respond from ability to verbally formulate a response, we do have evidence that the two are not as unrelated as Gardner implies. In an interesting early study, DeBoer (1938) studied responses to radio drama by monitoring galvanic skin response. He found that responses of young children developed incident by incident, showing no continuity or overall sense of the shape of the story. In adolescents, on the other hand, there was a clear development of response over the course of the narrative. This was especially evident with surprise endings: these provoked sharp reactions from adolescents, who had firm expectations about the story as a whole; in younger children who had no expectation about the outcome of the story, surprise endings caused no more reaction than any other incident. These reactions, which involved no verbalization of response, remind us of the long string of more recent studies which have shown that it is not until the onset of adolescence that children develop the ability to extrapolate beyond the immediate events of a narrative, either to complete it with an appropriate (rather than conventional) ending or to answer questions about implications of the events depicted (Peel, 1959; Goldman, 1965; McCreesh, 1970; Gardner & Gardner, 1971).

Finally, in focussing on the child as creator, Gardner undervalues the artist as his own first and most important audience. Just as in transactional language we 'monitor' our own speech, listening to ourselves and giving shape to our thought in the very process of trying to put it into words, so with the presentational media the artist monitors and learns from his work even as it takes shape before him. It is his sense of consistency and organization which must in the first instance be satisfied. For better or worse, the creator-as-audience will be bringing to bear his 'critical faculties', and therefore to the extent that those faculties have themselves undergone the qualitative changes associated with the coming of

formal operational structures, the art product of the adult will differ in its structural principles as well as its technical competence from that of the nine-year-old.

Conclusion

The model which we have been developing in this paper has many uses, for like any system it provides above all a way of ordering and interpreting new experiences. The ultimate test of its merit will be the extent to which it is adequate to that task, including its ability to provide a useful perspective on the many other symbolic systems than the few we considered in some detail here. In this paper we have been concerned primarily with reconceptualizing the nature and developmental course of artistic experience. It is interesting to note that in the course of this discussion, two of the perennial problems which plague any consideration of the arts have simply not arisen. We have not been concerned with 'emotion', nor has it been necessary to make a distinction between the 'artistic' and the merely 'art-like', the lasting and the ephemeral in the artistic tradition. We have not needed to be concerned with artistic value because the processes involved are the same whether we consider the child or the adult, the awkward or the accomplished. To the extent that we want standards of value to be specified, they would lie in the complexity or depth of the experience communicated through presentational form, as well as the integrity and coherence of the form itself. It is at least as possible to use a symbolic system poorly as it is to use it well.

Our treatment of emotion is of a different order. Whereas transactional symbolism works by isolating one strand of experience and analyzing it in detail, presentational symbolism requires an integrated response, in which various subsystems of constructs are brought into play at the same time. The response is both more complicated than that involving transactional symbolism, and closer in

form to our responses to everyday life. Kelly's treatment (1955) of emotion in terms of his personal construct theory is probably the most relevant in such a situation; the sees the emotions as aspects of particular situations which may arise in the process of construing. Anxiety, for example, "is the recognition that the events with which one is confronted lie outside" the usual range of application of ones construct system (p. 495), while hostility is essentially a continued effort to find support for a manner of construing "which has already proved itself a failure" (p. 510). As with Langer's analysis, the emotions become the result of the action of the mind, and as such remain aspects of that action rather than separate and somewhat mysterious entities.

The arts and the sciences emerge in this analysis as complementary results of man's tendency to build symbolic representations of his world. Though Cassirer (1944) among others has argued that symbolic systems have emerged in a sequence in which science "is the last step . . . and it may be regarded as the highest" (p. 20), our approach would lead us to look for a parallel development of presentational and transactional forms as man sought ways to symbolize his experience in the subjective and objective realms. Langer (1967) has made a somewhat similar point: "Artistic conception, for all its similarities to mythical ideation and even dream, is not a transitional phase of mental evolution, but a final symbolic form making revelations of truths about actual life. Like discursive reasoning, it seems to have unlimited potentialities" (p. 81).

It is those potentialities which we are finally beginning to understand and explore.

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Figure 1

Symbolic Systems

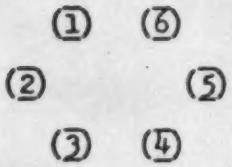
Presentational ——— Expressive ——— Transactional

SPECTATOR PARTICIPANT

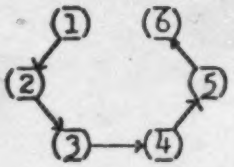
Figure 2

THE STRUCTURE OF CHILDREN'S STORIES

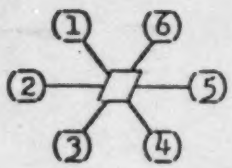
Heaps



Unfocussed Chains



Sequences



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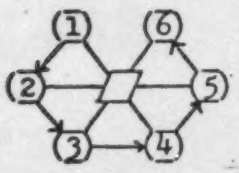
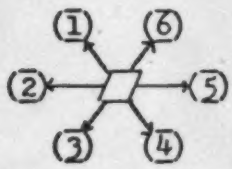
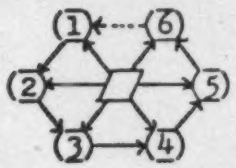


Primitive Narratives



Narratives



Key: ← complementary attribute

— shared attribute

▱ center

(1) incident or element

Plot Structure	Number of Stories: Age 2 (n=30)	Age 3 (n=30)	Age 4 (n=30)	Age 5 (n=30)	Total (n=120)
1. Heaps	5	3	0	2	10
2. Sequences	13	6	7	1	27
3. Primitive narratives	7	7	3	0	17
4. Unfocussed chains	0	2	3	5	10
5. Focussed chains	5	11	16	16	48
6. Narratives	0	1	1	6	8

Chi-square (ages 2 and 3 versus 4 and 5) = 28.63, df = 5, $p < .001$.

Chi-square (boys versus girls) = 1.47, df = 5, nsd.

Figure 3

A Model of Levels in the Formulation of Response

Mode of Thinking	Characteristic Response	
	Objective	Subjective
Preoperational (ages 2 to 6)	Narration, in whole or in part	Syncretistic, lacks integration
Concrete operational (age 7 to 11)	Summarization and categorization	Categorization, attributed to the work
Formal operational Stage I (12-15)	Analysis of the structure of the work or the motives of the characters; understanding through analogy	Identification or perception of involvement in the work
Formal operational Stage II (16-adult)	Generalization about the work; consideration of its theme and point of view	Understanding gained or not gained through the work; its effect on the reader's own view of the world